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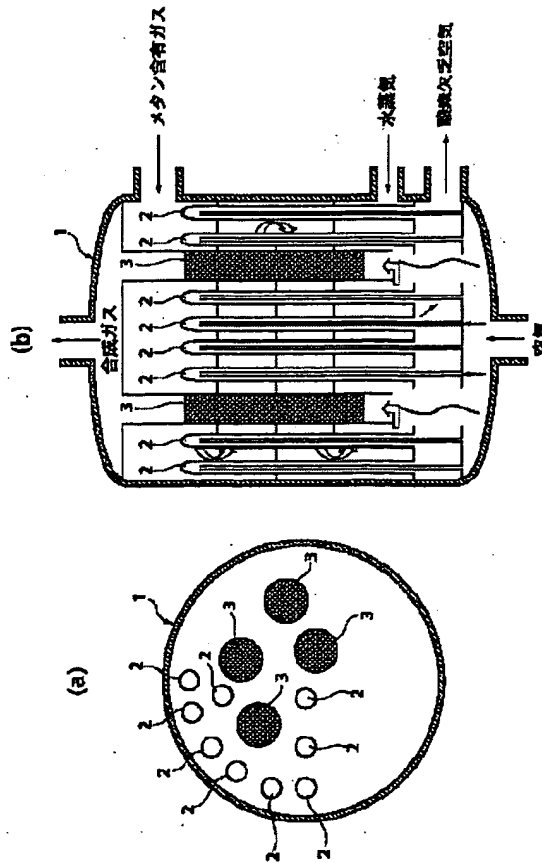
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TITLE : REACTOR USING MEMBRANE



ABSTRACT : PROBLEM TO BE SOLVED: To provide a reactor constitution suitable for obtaining a high oxygen permeating speed and a high yield of synthetic gas in the reaction using a membrane to produce synthetic gas from a gas containing air and methane by the use of an oxygen selective permeable ceramic membrane and a methane reforming catalyst.

SOLUTION: The reactor using the membrane characteristically uses a flow path formed in such a way that the oxygen selective permeable ceramic membrane in tube shape comprising an oxygen-ion/electron mixed conductive oxide neighboring the methane reforming catalyst, and a tube made of a metal or a dense ceramic which does not have oxygen selective permeability, filled in with the methane reforming catalyst, are arranged in parallel in the same pressure vessel, and that the gas containing methane comes into contact with the oxygen selective permeable ceramic membrane in tube shape in the upstream and passes through the part filled in with the methane reforming catalyst in the downstream.

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